

CLAIMS

1. An apparatus, comprising:
at least one light source for emitting lighting rays, said light source comprising a central optical axis; and
an optics block configured to direct substantially all of said light rays to define a horizontal beam pattern directed from approximately 0° to approximately 60° outboard, away, from a controlled vehicle with respect to said central optical axis, said optics block is further configured to direct substantially all of said light rays to define a vertical beam pattern directed from approximately -8° to approximately 10° with respect to said central optical axis.
2. An apparatus as in claim 1 wherein said horizontal beam pattern is substantially directed in the range approximately 32° (+ approximately 15° /- approximately 10°).
3. An apparatus as in claim 1 wherein said vertical beam pattern is substantially directed in the range approximately 0° (+ approximately 0° /- approximately 5°).
4. An apparatus as in claim 2 wherein said vertical beam pattern is substantially directed in the range approximately 0° (+ approximately 0° /- approximately 5°).
5. An apparatus as in claim 1 wherein a minimum of approximately 5 candelas are measurable less than approximately 5° selected from the group comprising: horizontally and vertically.
6. An apparatus as in claim 1 wherein a minimum of approximately 4 candelas are measurable less than approximately 10° horizontally.
7. An apparatus as in claim 1 wherein a minimum of approximately 3 candelas are measurable less than approximately 15° horizontally.

8. An apparatus as in claim 1, said optics block comprising at least one collimating portion.
9. An apparatus as in claim 1, said optics block comprising at least one deviator portion.
10. An apparatus as in claim 8, said optics block comprising at least one deviator portion.
11. An apparatus as in claim 10 wherein said at least one collimating portion and said at least one deviator portion are substantially aligned with one another.
12. An apparatus as in claim 11 comprising a first collimating portion, a first deviator portion, a second collimating portion and a second deviator portion.
13. An apparatus as in claim 12 wherein said first collimating portion is substantially aligned with said first deviator portion and said second collimating portion is substantially aligned with said second deviator portion.
14. An apparatus as in claim 1 configured to provide a device selected from the group comprising: an indicator, an illuminator and an information display.
15. An apparatus, comprising:
an optics block comprising at least one collimating portion and at least one deviator portion substantially aligned with one another, wherein said deviator portion comprises a first deviator segment that forms an angle with respect to a central optical axis that is less than an angle associated with light rays directed toward said deviator portion.
16. An apparatus as in claim 15 wherein said optics block is further configured such that light rays directed toward said deviator that pass a first deviator edge do not directly impinge upon said first deviator segment.

17. An apparatus as in claim 16 wherein said light rays that pass said first deviator edge do not directly impinge upon a second deviator segment.

18. An apparatus as in claim 15 wherein substantially all of said light rays directed toward said deviator portion are reflected off of a third deviator segment before being refracted from a first deviator segment.

19. An apparatus as in claim 15 wherein substantially all of said light rays directed toward said deviator portion are reflected off of a third deviator segment before being refracted from a first deviator segment.

20. An apparatus as in claim 17 wherein substantially all of said light rays directed toward said deviator portion are reflected off of a third deviator segment before being refracted from a first deviator segment.

21. An apparatus as in claim 15, said optics block further comprising a third deviator portion that defines a substantially convex shape.

22. An apparatus as in claim 15 configured to provide a device selected from the group comprising: an indicator, an illuminator and an information display.

23. An apparatus as in claim 15 configured as a rearview mirror assembly comprising a stationary housing, said stationary housing comprising at least one device selected from the group comprising: an imager, an automatic exterior light control module, a moisture sensor module, a compass sensor, a compass, a speaker, a microphone, a windshield wiper automatic control, a digital signal processor, an automatic defogger control, a collision avoidance control, a lane departure warning module, an electro-optic mirror element control module, a supplemental illuminator module, a photo sensor and a processor.

24. An apparatus as in claim 15 configured as a rearview mirror assembly comprising a mirror housing, said mirror housing comprising at least one device selected from the group comprising: an imager, an automatic exterior light control

module, a one moisture sensor module, a compass sensor, a compass, a speaker, a microphone, a windshield wiper automatic control, a digital signal processor, a digital sound processor, a GPS system, a navigation system, an automatic defogger control, a collision avoidance control, a lane departure warning module, an electro-optic mirror element control module, a supplemental illuminator module, a photo sensor and a processor.

25. An apparatus as in claim 24 further comprising a mirror housing, said mirror housing comprising at least one device selected from the group comprising: an imager, an automatic exterior light control module, a one moisture sensor module, a compass sensor, a compass, a speaker, a microphone, a windshield wiper automatic control, a digital signal processor, a digital sound processor, a GPS system, a navigation system, an automatic defogger control, a collision avoidance control, a lane departure warning module, an electro-optic mirror element control module, a supplemental illuminator module, a photo sensor and a processor.

26. An apparatus as in claim 15 configured as an exterior rearview mirror assembly that swivels such that the light rays are directed in a first direction prior to mirror swivel and another direction subsequent to mirror swivel.

27. An apparatus as in claim 26 wherein said mirror swivels automatically.

28. An apparatus as in claim 15 configured as a rearview mirror and comprising a mirror element comprising a reflective comprising an area through which substantially all of said light rays pass.

29. An apparatus as in claim 28 wherein said mirror element is selected from the group comprising: prismatic and electro-optic.

30. An apparatus, comprising:
at least one light source for emitting lighting rays, said light source comprising a central optical axis; and

an optics block configured to direct substantially all of said light rays to define a horizontal beam pattern directed from approximately 0° to approximately 60° outboard, away, from a controlled vehicle with respect to said central optical axis.

31. An apparatus as in claim 30 wherein said horizontal beam pattern is substantially directed in the range approximately 32° (+ approximately 15°/- approximately 10°).

32. An apparatus as in claim 30 wherein a vertical beam pattern is substantially directed in the range approximately 0° (+ approximately 0°/- approximately 5°).

33. An apparatus as in claim 31 wherein a vertical beam pattern is substantially directed in the range approximately 0° (+ approximately 0°/- approximately 5°).

34. An apparatus as in claim 30 wherein a minimum of approximately 5 candelas are measurable less than approximately 5° selected from the group comprising: horizontally and vertically.

35. An apparatus as in claim 30 wherein a minimum of approximately 4 candelas are measurable less than approximately 10° horizontally.

36. An apparatus as in claim 30 wherein a minimum of approximately 3 candelas are measurable less than approximately 15° horizontally.

37. An apparatus as in claim 30, said optics block comprising at least one collimating portion.

38. An apparatus as in claim 30, said optics block comprising at least one deviator portion.

39. An apparatus as in claim 37, said optics block comprising at least one deviator portion.

40. An apparatus as in claim 39 wherein said at least one collimating portion and said at least one deviator portion are substantially aligned with one another.

41. An apparatus as in claim 40 comprising a first collimating portion, a first deviator portion, a second collimating portion and a second deviator portion.

42. An apparatus as in claim 41 wherein said first collimating portion is substantially aligned with said first deviator portion and said second collimating portion is substantially aligned with said second deviator portion.

43. An apparatus as in claim 30 wherein said optics block is further configured to direct substantially all of said light rays to define a vertical beam pattern directed from approximately -8° to approximately 10° with respect to said central optical axis.

44. An apparatus as in claim 30 configured to provide a device selected from the group comprising: an indicator, an illuminator and an information display.

45. An apparatus as in claim 30 configured as a rearview mirror assembly comprising a stationary housing, said stationary housing comprising at least one device selected from the group comprising: an imager, an automatic exterior light control module, a moisture sensor module, a compass sensor, a compass, a speaker, a microphone, a windshield wiper automatic control, a digital signal processor, an automatic defogger control, a collision avoidance control, a lane departure warning module, an electro-optic mirror element control module, a supplemental illuminator module, a photo sensor and a processor.

46. An apparatus as in claim 30 configured as a rearview mirror assembly comprising a mirror housing, said mirror housing comprising at least one device selected from the group comprising: an imager, an automatic exterior light control module, a one moisture sensor module, a compass sensor, a compass, a speaker, a microphone, a windshield wiper automatic control, a digital signal processor, a digital sound processor, a GPS system, a navigation system, an automatic defogger control, a collision avoidance control, a lane departure warning module, an electro-optic

mirror element control module, a supplemental illuminator module, a photo sensor and a processor.

47. An apparatus as in claim 45 further comprising a mirror housing, said mirror housing comprising at least one device selected from the group comprising: an imager, an automatic exterior light control module, a one moisture sensor module, a compass sensor, a compass, a speaker, a microphone, a windshield wiper automatic control, a digital signal processor, a digital sound processor, a GPS system, a navigation system, an automatic defogger control, a collision avoidance control, a lane departure warning module, an electro-optic mirror element control module, a supplemental illuminator module, a photo sensor and a processor.

48. An apparatus as in claim 30 configured as an exterior rearview mirror assembly that swivels such that the light rays are directed in a first direction prior to mirror swivel and another direction subsequent to mirror swivel.

49. An apparatus as in claim 47 wherein said mirror swivels automatically.

50. An apparatus as in claim 30 configured as a rearview mirror and comprising a mirror element comprising a reflective comprising an area through which substantially all of said light rays pass.

51. An apparatus as in claim 50 wherein said mirror element is selected from the group comprising: prismatic and electro-optic.

52. An apparatus, comprising:
at least one light source for emitting lighting rays, said light source comprising a central optical axis; and
an optics block configured to direct substantially all of said light rays to define a vertical beam pattern directed from approximately -8° to approximately 10° with respect to said central optical axis.

53. An apparatus as in claim 52 wherein said horizontal beam pattern is substantially directed in the range approximately 32° (+ approximately 15° /- approximately 10°).
54. An apparatus as in claim 52 wherein said vertical beam pattern is substantially directed in the range approximately 0° (+ approximately 0° /- approximately 5°).
55. An apparatus as in claim 53 wherein said vertical beam pattern is substantially directed in the range approximately 0° (+ approximately 0° /- approximately 5°).
56. An apparatus as in claim 52 wherein a minimum of approximately 5 candelas are measurable less than approximately 5° selected from the group comprising: horizontally and vertically.
57. An apparatus as in claim 52 wherein a minimum of approximately 4 candelas are measurable less than approximately 10° horizontally.
58. An apparatus as in claim 52 wherein a minimum of approximately 3 candelas are measurable less than approximately 15° horizontally.
59. An apparatus as in claim 52, said optics block comprising at least one collimating portion.
60. An apparatus as in claim 52, said optics block comprising at least one deviator portion.
61. An apparatus as in claim 52, said optics block comprising at least one deviator portion.
62. An apparatus as in claim 52 wherein said at least one collimating portion and said at least one deviator portion are substantially aligned with one another.

63. An apparatus as in claim 62 comprising a first collimating portion, a first deviator portion, a second collimating portion and a second deviator portion.

64. An apparatus as in claim 63 wherein said first collimating portion is substantially aligned with said first deviator portion and said second collimating portion is substantially aligned with said second deviator portion.

65. An apparatus as in claim 52 wherein said optics block is further configured to define a horizontal beam pattern directed from approximately 0° to approximately 60° outboard, away, from a controlled vehicle with respect to said central optical axis.

66. An apparatus as in claim 52 configured to provide a device selected from the group comprising: an indicator, an illuminator and an information display.

67. An apparatus as in claim 52 configured as a rearview mirror assembly comprising a stationary housing, said stationary housing comprising at least one device selected from the group comprising: an imager, an automatic exterior light control module, a moisture sensor module, a compass sensor, a compass, a speaker, a microphone, a windshield wiper automatic control, a digital signal processor, an automatic defogger control, a collision avoidance control, a lane departure warning module, an electro-optic mirror element control module, a supplemental illuminator module, a photo sensor and a processor.

68. An apparatus as in claim 52 configured as a rearview mirror assembly comprising a mirror housing, said mirror housing comprising at least one device selected from the group comprising: an imager, an automatic exterior light control module, a one moisture sensor module, a compass sensor, a compass, a speaker, a microphone, a windshield wiper automatic control, a digital signal processor, a digital sound processor, a GPS system, a navigation system, an automatic defogger control, a collision avoidance control, a lane departure warning module, an electro-optic mirror element control module, a supplemental illuminator module, a photo sensor and a processor.

69. An apparatus as in claim 67 further comprising a mirror housing, said mirror housing comprising at least one device selected from the group comprising: an imager, an automatic exterior light control module, a one moisture sensor module, a compass sensor, a compass, a speaker, a microphone, a windshield wiper automatic control, a digital signal processor, a digital sound processor, a GPS system, a navigation system, an automatic defogger control, a collision avoidance control, a lane departure warning module, an electro-optic mirror element control module, a supplemental illuminator module, a photo sensor and a processor.

70. An apparatus as in claim 52 configured as an exterior rearview mirror assembly that swivels such that the light rays are directed in a first direction prior to mirror swivel and another direction subsequent to mirror swivel.

71. An apparatus as in claim 70 wherein said mirror swivels automatically.

72. An apparatus as in claim 52 configured as a rearview mirror and comprising a mirror element comprising a reflective comprising an area through which substantially all of said light rays pass.

73. An apparatus as in claim 72 wherein said mirror element is selected from the group comprising: prismatic and electro-optic.